



Overview

Welcome to the Arch Avenger Pro Version 2.

This synth has a smooth analog sound with enough bite to cut through a dense mix, there's enough features packed into this synth to keep you twiddling for hours and the delay fx really enhance the whole experience encompassing you in a wide stereo field. From analog brass's to fat bass's and leads all the way to wild fx, enjoy".

New Features And Changes In Version 2

- Fully redesigned GUI featuring a 5 octave span graphic keyboard with mod wheel and bender, responds to mouse input.
- Seedable random module(Gate) with frequency,seed,level,sync,cycles controls.
- Stereo chorus with wet&dry mix and three wave's
- Added waveforms-"sine,white noise&pink noise to oscillators 1+2
- Five new presets for a total of 65 presets,also some of the presets from version 1.0 have been enhanced and or replaced.

Fix's In Version 2

- Fixed denormal number's which was causing a major cpu spike which was sometimes ever increasing when the vsti was loaded in a music app but not in use for short extended periods of time.

Bug's

- The graphic keyboard will not respond to external midi input,I have disabled it because of serious latency issues'.It will only respond to mouse input.

Existing Feature's

- Two voltage controlled audio oscillators,each with separate three position octave slide switches,waveform selectors,and volume controls.Oscillator 2 has separate interval control and both oscillators have fine pitch control.
Both oscillators have switchable response curve's.
- LFO oscillator switchable between 7 waveforms
- Voltage controlled amplifier
- Moog voltage controlled filter,24db/octave,with self oscillation feature
- Separate contour generators for VCA and VCF

- Stereo multitap delay effects
- Frequency analyser
- Monophonic or polyphonic operation
- Retrigger option in mono mode
- Velocity control
- 16 channel midi
- Full midi/vst automation(can be controlled from your external keyboard)
- Sixty varied presets that show what this synth is capable of.
- 6 note polyphony

Specifications

Oscillator 1

Waveforms: saw,triangle,pulse,sine,white noise,pink noise

Pulse duty cycle: 10%

Octave switch footages: 16',8,4'

Octave switch accuracy: 0.3%

Oscillators will not lock when not in sync.

Oscillator 2

Waveforms: saw,triangle,pulse,sine,white noise,pink noise

Pulse duty cycle: 50%

Octave switch footages: 32',16',8'

Octave switch accuracy: 0.3%

Interval control range: Greater than \pm perfect fifth

Oscillator Synchronization

In the sync mode, oscillator 2's sawtooth wave can be reset by itself or by the reset pulse from oscillator 1. This locks the fundamental frequency of oscillator 2 to oscillator 1 generating a complex waveform.

Voltage Controlled Low Pass Filter

Type: 25db/octave cutoff slope

Filter-Keyboard tracking: three position

Slide switch allows routing of control voltage to filter

- 0 filter does'nt track keyboard
- ½ 2 octaves of keyboard = one octave on filter
- 1 filter tracks keyboard within 1%

Cutoff frequency(with control set to zero,in self oscillating mode) $666 \pm 50\text{Hz}$

Range of filter cutoff control: 8 octaves

Maximum sweep of cutoff frequency by filter contour generator: 8 octaves

Contour Generators

Amount: 2 (one for controlling the filter through an attenuator,and the other for controlling the VCA.

Range of attack times: 1 msec to 10 sec

Range of decay/release times: From 1 msec to 10 sec minimum

Range of sustain level: From 0 - 100% of contour peak

Voltage Controlled Amplifier

Audio output level: 0 dBm

Bleed through level: Better than -75dBm

LP Rnd Gate

Seed: Seed value of internal random number generator. It will assign a random seed if set to 0.

Cycles: Controls gating cycles up to a value of 64

Level: The range of random values.
0V - 10V -> [0V] - [-5V,5V]

Freq: This basically controls the gate oscillator speed

Sync: Variable gate oscillator sync

Low Frequency Oscillator

Modulation oscillator waveshapes: "sine,saw,ramp,triangle,pulse,white noise and pink noise.

Modulation oscillator rate: From 0.26Hz to 31Hz

Amount of modulation(square wave):

Oscillator: from zero to 1 octave

Filter: from zero to 4.5 octaves

Selectable modulation sources: 'mod wheel,velocity,aftertouch,LFO,filter envelope.

Selectable modulation destination: filter pitch,filter resonance, oscillator 1 pulse width,oscillator 2 pulse width,oscillator 1 pitch, oscillator 1 sync.

The LFO does not 'sync' to your host sequencers tempo

Additional Controls&Modules

2 Fine pitch controls for Osc 1 and Osc 2,
range: -0.010 msec to 0.010 msec

Glide: Linear,continuously variable from less than 2 msec to 3 sec

Velocity: 0.000 value equals-no velocity control and lower overall volume, whereas a maximum value of 10.00 will give you full velocity control but greater possibility of overloading the VCA resulting in distortion artifacts. (Recommendation:- keep velocity values between 7.00 - 8.30 or lower value's).

Chorus FX

PreDly1,PreDly2 :

Range : 0 - 100 ms (default range)

Parameter type : Control Voltage, Volt/ms

Parameter explanation : Initial delay, the minimum delay for Voice 1 and Voice 2

MaxDelay1,MaxDelay2 :

Range : 0 - 100 ms (default range)

Parameter type : Control Voltage, Volt/ms

Parameter explanation : Maximum delay, the maximum delay for Voice 1 and Voice 2.

The delay time in the chorus will be between PreDly and MaxDelay depending on the phase of the LFO.

VoiceMix :

Range : 0 - 10 V

Parameter type : Control Voltage, Cross fade

Parameter explanation : Mix between Voice1 (0V) and Voice2 (10V)

Wet :

Range : 0 - 10 V

Parameter type : Control Voltage, Level

Parameter explanation : The level the "wet", processed audio coming from the delay unit.

Dry :

Range : 0 - 10 V

Parameter type : Control Voltage, Level

Parameter explanation : The level the "dry" audio, coming from the input.

Spread :

Range : 0 - 10

Parameter type : Control Voltage, Cross Fade

Parameter explanation : If Spread = 0, each channel is sent exactly the same location in the stereo field.

If Spread = 10, Voice 1 and Voice 2 will float in the stereo field. The modulation is made by LFO3.

Rate1,Rate2,Rate3 :

Range : 0 - 5 Hz

Parameter type : Control Voltage, Volt/Hz

Parameter explanation : Sets the rate (frequency) for each modulating LFO.

Mod1Wave, Mod2Wave, Mod3Wave :
Waveform : Sine, Triangle

Modulation Mode :
Range : Internal LFO

On/Off switch

Stereo Multitap delay effects:

3 delay line's - Delay speed: 1.00 msec to 6160.0 sec,
and also features 3 separate mix volume adjusters enabling you to
adjust the level of the 3 delay line's separately. Adjustable feedback and
damping is also provided, and the effect can be switched on or off.

Additional Info

- Cpu usage is medium- low (Based on testing on an Intel prescott 3ghz processor).
- This soft synth is for PC only.
- This synth is essentially monophonic, but the multitap delay and chorus is stereo so with that in mind, the internal outputs have been wired in stereo.
- The multitap fx do not 'sync' to your host sequencer's tempo, as does not the Lfo.

Midi CC's

(Oscillator1)
octave- 3
waveform- 9
responseC-14
sync- 15

(Oscillator2)
octave- 16
waveform- 17
responseC-18
interval- 19

(Misc)

mono mode-20
velocity- 21
Glide- 37
retrigger-22
fpoc1- 23
fpoc2- 24

(LFO)

pitch- 25
waveform- 26
source- 27
dest- 28
amount- 29

(Mixer)

osc1- 30
osc2- 31
tracking- 32

(Filter)

contourA- 41
emphasis- 46
cutoff- 47

(Filter Contour)

attack- 48
sustain- 49
release- 50
decay/rel-51

(Loudness Contour)

attack- 52
decay- 53
sustain- 54
release- 55

(Effects- Multitap delay)

L1- 56
L2- 57
L3- 58
mix1- 59
mix2- 60

mix3- 61
feedback- 62
damping- 63

(Chorus)

PreDly1(ms)- 64
PreDly2(ms)- 65
MaxDelay1(ms)-66
MaxDelay2(ms)-67
VoiceMix- 68

Rate2(Hz)- 69
Rate1(Hz)- 70
Spread- 71
Dry- 72
Wet- 73
Rate3(Hz)-74

(Gate)

Freq- 75
Cycles- 76
Sync- 77
Level- 78
Seed- 79

(Master Level)

Master- 80

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Credits

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Miscellaneous

You can hear some of my original song's at:

<http://www.mp3.com.au/artist.asp?id=6641>